

Table 9
Summary of Results for Intracoastal Waterway Sediment

Intracoastal Waterway Sediment (all samples from 0-0.5 ft bgs)							
Location	RI/FS Concentration Gradient (mg/kg DW)	2010 Analytical Results				Mean Bioassay Results***	
		2010 BERA Concentration Gradient (mg/kg DW)		Marine Sediment Benchmark (mg/kg DW)	Pore Water (mg/L)		
BERA Sample ID: EIWSED01 Intracoastal Waterway Sediment RI/FS Sample ID: IWSE-01	Location represents high concentration of 4,4'-DDT; and low concentrations of four PAHs. Hexachlorobenzene is below detection limit and not expected to be present.	Location represents mid concentrations of 2 PAHs; and low concentrations of 6 PAHs and 4,4'-DDT.					
4,4'-DDT	0.00332	High	0.00023 J	Low	0.00119	< 0.0000035 J	0.000001
Acenaphthene	0.013 U	NA	0.0071	Low	0.016	0.000052	0.0404
Benzo(a)anthracene	0.0133 U	NA	0.03	Low	0.261	< 0.0000035	NA
Chrysene	0.0145	Low	0.046	Low	0.384	< 0.0000046	NA
Dibenz(a,h)anthracene	0.0126 U	NA	0.0046	Low	0.0634	< 0.0000034	NA
Fluoranthene	0.0309	Low	0.12	Mid	0.6	< 0.0000059	0.00296
Fluorene	0.0129 U	NA	0.019	Low	0.019	0.000043	0.05
Hexachlorobenzene	0.0161 U	NA	NA	NA	0.006	< 0.0000035	0.129
Phenanthrene	0.0373	Low	0.15	Mid	0.24	0.000031	0.0046
Pyrene	0.0244	Low	0.081	Low	0.665	< 0.0000047	0.00024
Total PAHs*	NA	NA	0.46	NA	4.022	NA	NA
Total Organic Carbon	NA	NA	4,130	NA	NA	NA	NA
BERA Sample ID EIWSED02 Intracoastal Waterway Sediment RI/FS sample ID: IWSE03	Location represents high concentrations of 2 PAHs; mid concentrations of 5 PAHs; and low concentrations of 1 PAH and 4,4'-DDT. Hexachlorobenzene is below detection limit and not expected to be present.	Location represents high concentration of 1 PAH; mid concentrations of 5 PAHs; and low concentrations of 2 PAHs and 4,4'-DDT.					
4,4'-DDT	0.000575	Low	0.00190	Low	0.00119	< 0.0000098 J	0.000001
Acenaphthene	0.0631	Mid	0.023	Low	0.016	0.000037	0.0404
Benzo(a)anthracene	0.395	Mid	0.24	Mid	0.261	< 0.0000028	NA
Chrysene	0.475	Mid	0.31	Mid	0.384	< 0.0000037	NA
Dibenz(a,h)anthracene	0.151	Mid	0.063	Mid	0.0634	< 0.0000027	NA
Fluoranthene	0.804	High	0.52	High	0.6	< 0.0000048	0.00296
Fluorene	0.0406	Low	0.020	Low	0.019	0.000029	0.05
Hexachlorobenzene	0.0156 U	NA	NA	NA	0.006	< 0.0000031	0.129
Phenanthrene	0.508	Mid	0.24	Mid	0.24	0.000022 J	0.0046
Pyrene	0.862	High	0.47	Mid	0.665	< 0.0000038	0.00024
Total PAHs*	NA	NA	1.9	NA	4.022	NA	NA
Total Organic Carbon	NA	NA	7,200	NA	NA	NA	NA

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Location	RI/FS Concentration Gradient (mg/kg DW)		2010 Analytical Results			Marine Sediment Benchmark (mg/kg DW)	Pore Water (mg/L)	Marine Surface Water Benchmark (mg/L)
			2010 BERA Concentration Gradient (mg/kg DW)	Marine Sediment Benchmark (mg/kg DW)	Pore Water (mg/L)			
BERA Sample ID: EIWS03								
Intracoastal Waterway Sediment RI/FS sample ID: IWSE04	Location represents mid concentrations of 5 PAHs and low concentration of 4,4'-DDT. Hexachlorobenzene is below detection limit and not expected to be present.	Location represents mid concentrations of 3 PAHs; and low concentrations of 5 PAHs and 4,4'-DDT.						
4,4'-DDT	0.0011	Low	0.00032 J / 0.00089 J	Low	0.00119	< 0.0000013 J	0.000001	
Acenaphthene	0.0176 U	NA	0.0052 / 0.0022 J	Low	0.016	0.000024	0.0404	
Benzo(a)anthracene	0.018 U	NA	0.052 / 0.048	Low	0.261	< 0.0000026	NA	
Chrysene	0.164	Mid	0.07 / 0.067	Mid	0.384	< 0.0000034	NA	
Dibenz(a,h)anthracene	0.0694	Mid	0.015 / 0.014	Low	0.0634	< 0.0000025	NA	
Fluoranthene	0.231	Mid	0.12 / 0.094	Mid	0.6	< 0.0000044	0.00296	
Fluorene	0.0173 U	NA	0.0067 / 0.0032 J	Low	0.019	0.00002 J	0.05	
Hexachlorobenzene	0.0217 U	NA	NA	NA	0.006	< 0.00000039	0.129	
Phenanthrene	0.125	Mid	0.071 / 0.043	Low	0.24	0.000012 J	0.0046	
Pyrene	0.285	Mid	0.1 / 0.11	Mid	0.665	< 0.0000035	0.00024	
Total PAHs*	NA	NA	0.44 / 0.38	NA	4.022	NA	NA	
Total Organic Carbon	NA	NA	6,320 / 6,680	NA	NA	NA	NA	
BERA Sample ID: EIWS04								
Intracoastal Waterway Sediment RI/FS sample ID: IWSE07	Location represents mid concentrations of 6 PAHs; and low concentrations of 2 PAHs and hexachlorobenzene.	Location represents mid concentrations of 2 PAHs; and low concentrations of 6 PAHs.						
4,4'-DDT	0.000216 U	NA	NA	NA	0.00119	< 0.00000076 J	0.000001	
Acenaphthene	0.0239	Low	0.0029 J	Low	0.016	< 0.0000088	0.0404	
Benzo(a)anthracene	0.172	Mid	0.032	Low	0.261	< 0.0000052	NA	
Chrysene	0.197	Mid	0.054	Low	0.384	< 0.0000068	NA	
Dibenz(a,h)anthracene	0.235	Mid	0.0087 J	Low	0.0634	< 0.000005	NA	
Fluoranthene	0.124	Mid	0.074	Mid	0.6	< 0.0000088	0.00296	
Fluorene	0.0277	Low	0.0031 J	Low	0.019	< 0.0000076	0.05	
Hexachlorobenzene	0.0319	Low	< 0.0012	NA	0.006	< 0.00000037	0.129	
Phenanthrene	0.0645	Mid	0.028	Low	0.24	< 0.00001	0.0046	
Pyrene	0.134	Mid	0.073	Mid	0.665	< 0.000007	0.00024	
Total PAHs*	NA	NA	0.28	NA	4.022	NA	NA	
Total Organic Carbon	NA	NA	5,480	NA	NA	NA	NA	

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			2010 BERA Concentration Gradient (mg/kg DW)	Marine Sediment Benchmark (mg/kg DW)	Pore Water (mg/L)			
BERA Sample ID: EIWSED05 Intracoastal Waterway Sediment RI/FS sample ID: IWSE08	Location represents mid concentrations of 5 PAHs; and low concentration of 4,4'-DDT. Hexachlorobenzene is below detection limit and not expected to be present.	Location represents mid concentrations of 2 PAHs; and low concentrations of 6 PAHs and 4,4'-DDT.						
4,4'-DDT	0.000481	Low	0.00029 J	Low	0.00119	< 0.0000013 J / < 0.0000016 J	0.000001	
Acenaphthene	0.0155 U	NA	0.0046 J	Low	0.016	0.000027 / 0.000031	0.0404	
Benzo(a)anthracene	0.0675	Mid	0.042	Low	0.261	< 0.0000034 / < 0.0000028	NA	
Chrysene	0.0717	Mid	0.059	Low	0.384	< 0.0000044 / < 0.0000036	NA	
Dibenz(a,h)anthracene	0.0151 U	NA	0.01	Low	0.0634	< 0.0000033 / < 0.0000027	NA	
Fluoranthene	0.158	Mid	0.1	Mid	0.6	< 0.0000057 / < 0.0000047	0.00296	
Fluorene	0.0153 U	NA	0.0045 J	Low	0.019	0.000023 J / 0.000026	0.05	
Hexachlorobenzene	0.0192 U	NA	NA	NA	0.006	< 0.0000037 / < 0.0000044	0.129	
Phenanthrene	0.0756	Mid	0.051	Low	0.24	0.000015 J / 0.000015 J	0.0046	
Pyrene	0.158	Mid	0.084	Mid	0.665	< 0.0000045 / < 0.0000037	0.00024	
Total PAHs*	NA	NA	0.36	NA	4.022	NA	NA	
Total Organic Carbon	NA	NA	6,820	NA	NA	NA	NA	
BERA Sample ID: EIWSED06 Intracoastal Waterway Reference Sediment Sample located in Intracoastal Waterway Background Area near RI Sample location IWSE22	No detections above screening values were indicated in the vicinity of this location during RI sampling.	Location represents low concentrations of 3 PAHs.						
4,4'-DDT	NA	NA	< 0.00017	NA	0.00119	< 0.000001 J	0.000001	
Acenaphthene	NA	NA	< 0.0014 JL	NA	0.016	< 0.0000088	0.0404	
Benzo(a)anthracene	NA	NA	< 0.0017 JL	NA	0.261	< 0.0000052	NA	
Chrysene	NA	NA	0.0019 JL	Low	0.384	< 0.0000068	NA	
Dibenz(a,h)anthracene	NA	NA	< 0.0015 JL	NA	0.0634	< 0.000005	NA	
Fluoranthene	NA	NA	0.0019 JL	Low	0.6	< 0.0000088	0.00296	
Fluorene	NA	NA	< 0.0011 JL	NA	0.019	< 0.0000076	0.05	
Hexachlorobenzene	NA	NA	< 0.0012 JL	NA	0.006	< 0.0000039	0.129	
Phenanthrene	NA	NA	< 0.0014 JL	NA	0.24	< 0.00001	0.0046	
Pyrene	NA	NA	0.0025 JL	Low	0.665	< 0.000007	0.00024	
Total PAHs*	NA	NA	0.006	NA	4.022	NA	NA	
Total Organic Carbon	NA	NA	6,060	NA	NA	NA	NA	

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		2010 BERA Concentration Gradient (mg/kg DW)	Marine Sediment Benchmark (mg/kg DW)	Pore Water (mg/L)	Marine Surface Water Benchmark (mg/L)		
BERA Sample ID: EIWS07	No detections above screening values were indicated in the vicinity of this location during RI sampling.	Location represents low concentrations of 2 PAHs.					
Intracoastal Waterway Reference Sediment Sample located in Intracoastal Waterway Background Area near RI Sample location IWSE24							
4,4'-DDT	NA	NA	< 0.00017	NA	0.00119	< 0.00000058	0.000001
Acenaphthene	NA	NA	< 0.0014 JL	NA	0.016	< 0.000026	0.0404
Benzo(a)anthracene	NA	NA	< 0.0017 JL	NA	0.261	< 0.000018	NA
Chrysene	NA	NA	< 0.0015 JL	NA	0.384	< 0.000028	NA
Dibenz(a,h)anthracene	NA	NA	< 0.0015 JL	NA	0.0634	< 0.000017	NA
Fluoranthene	NA	NA	0.0018 JL	Low	0.6	< 0.00002	0.00296
Fluorene	NA	NA	< 0.0011 JL	NA	0.019	< 0.000027	0.05
Hexachlorobenzene	NA	NA	< 0.0012 JL	NA	0.006	< 0.000022	0.129
Phenanthrene	NA	NA	< 0.0014 JL	NA	0.24	< 0.000022	0.0046
Pyrene	NA	NA	0.0018 JL	Low	0.665	< 0.000019	0.00024
Total PAHs*	NA	NA	0.004	NA	4.022	NA	NA
Total Organic Carbon	NA	NA	5,090	NA	NA	NA	NA

Notes:

bgs - below ground surface

DW - dry weight

J - estimated value

NA - not analyzed, available, or applicable

U - not detected

L - bias in results likely to be low

- | | |
|------|--|
| High | = High concentration within the gradient |
| Mid | = Mid concentration within the gradient |
| Low | = Low concentration within the gradient |

Bolding indicates that the detected concentration is greater than the ecological screening benchmark (Table 6 Final BERA WP & SAP; URS, 2010a)

Results for duplicate samples are separated by a "/".

* Total PAHs represents the summation of the PAH COPECs detected in sediment from the 2010 data.

** The primary growth endpoint Dry Wt is the dry weight of surviving organisms divided by the number of surviving organisms. Biomass (the dry weight of surviving organisms divided by initial number of organisms) is not routinely applied to sediment testing (EPA, 2000).

***Appendix B shows all of the individual replicates for each test chamber.

This table presents the mean bioassay results for each sample based on five replicates.